

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Pulkkinen, et al.

Examiner: Unassigned

Serial No.: Unassigned

Group Art Unit: Unassigned

Filed: Herewith

Docket: 187-64

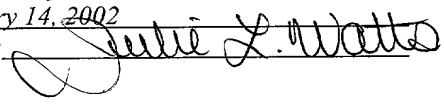
For: HEART RATE MONITOR

Dated: January 14, 2002

Commissioner for Patents  
Washington, D.C. 20231

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PRELIMINARY AMENDMENT

Sir:

Prior to examination on the merits, kindly amend the application as follows:

IN THE SPECIFICATION:

Page 1, substitute the paragraph beginning at line 2 with the following:

BRIEF DESCRIPTION OF THE RELATED ART

[0001] The invention relates to heart rate monitors. The invention is applied to a personal non-invasive heart rate monitor. The heart rate monitor equipment may consist e.g. of a conventional two-part device comprising a heart rate transmitter, usually of the transmitter belt type, comprising ECG electrodes, and a wristband receiver unit having a telemetric, inductive or optical connection to the heart rate transmitter and comprising e.g. a microprocessor, display and a user interface. Alternatively, the equipment can be a heart rate measurement apparatus which constitutes one integrated whole, particularly a single wristband, in which case the wristband also comprises a sensor, such as ECG electrodes or a

pressure sensor, in addition to the other parts. The sensor may even be an optical heart rate measurement sensor.

Page 2, substitute the paragraph beginning at line 14 with the following:

#### SUMMARY OF THE INVENTION

[0005] An object of the invention is thus to provide a new heart rate monitor, which avoids problems and disadvantages associated with the known solutions.

Page 3, substitute the paragraph beginning at line 1 with the following:

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The invention is now described in connection with the preferred embodiments and with reference to the accompanying drawings, in which

Page 3, substitute the paragraph beginning at line 14 with the following:

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0016] The invention thus relates to a carry-on heart rate monitor measuring a person's heart rate non-invasively, i.e. from outside a body, i.e. in practice on the skin of a person.

#### IN THE CLAIMS:

Please amend Claims 3, 8, and 11 by rewriting the same as follows:

3. (Amended) A heart rate monitor as claimed in claim 1, wherein the display element for displaying a settable maximum limit for the heart rate level and the second end of the display element unit controlled according to the heart rate level are located on the same side of the display with respect to both a center line of the display parallel to the reading

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direction of the display and a center line of the display perpendicular to the reading direction of the display.

8. (Amended) A heart rate monitor as claimed in claim 6, wherein in a second display mode, the minimum limit and the maximum limit for the heart rate level are shown as a proportion of the maximum heart rate.

11. (Amended) A heart rate monitor as claimed in claim 6, wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.

Please add the following new Claims 14-19:

--14. A heart rate monitor as claimed in claim 2, wherein the display element for displaying a settable maximum limit for the heart rate level and the second end of the display element unit controlled according to the heart rate level are located on the same side of the display with respect to both a center line of the display parallel to the reading direction of the display and a center line of the display perpendicular to the reading direction of the display.

15. A heart rate monitor as claimed in claim 7, wherein in a second display mode, the minimum limit and the maximum limit for the heart rate level are shown as a proportion of the maximum heart rate.

16. A heart rate monitor as claimed in claim 7, wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.

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17. A heart rate monitor as claimed in claim 8, wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.

18. A heart rate monitor as claimed in claim 9, wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.

19. A heart rate monitor as claimed in claim 10, wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.--

**IN THE ABSTRACT:**

Page 13, substitute the paragraph beginning at line 1 with the following:

**ABSTRACT OF THE DISCLOSURE**

The invention relates to a heart rate monitor. The essential point of the invention is that a display element (201) of a display (20) of the heart rate monitor for displaying a settable minimum limit for a heart rate level is located at a first end (211) of a display element unit (210) controlled according to the heart rate level, on the same side of the display as the first end of the display element unit. Similarly, a display element (202) for displaying a settable maximum limit for a heart rate level is located at a second end (220) of the display element unit (210), on the same side of the display as the second end of the display element unit.

**REMARKS**

The above-identified application has been amended for formal purposes and to remove the multiple dependency of Claims 3, 8, and 11.

New Claim 14 has been added and incorporates the subject matter set forth in Claim 3, except that Claim 14 depends from Claim 2. New Claim 15 has been added and incorporates the subject matter set forth in Claim 8, except that Claim 15 depends from Claim 7. New Claim 16 has been added and incorporates the subject matter in Claim 11, except that Claim 16 depends from Claim 7.

New Claim 17 has been added and incorporates the subject matter in Claim 11, except that Claim 17 depends from Claim 8. New Claim 18 has been added and incorporates the subject matter in Claim 11, except that Claim 18 depends from Claim 9. New Claim 19 has been added and incorporates the subject matter in Claim 11, except that Claim 19 depends from Claim 10.

It is believed that the application is now in proper form for examination and such action is respectfully solicited.

Respectfully submitted,



Rod S. Turner  
Registration No.: 38,639  
Attorney for Applicants

HOFFMANN & BARON, LLP  
6900 Jericho Turnpike  
Syosset, New York 11791  
(516) 822-3550  
RST:jlw

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**VERSION OF AMENDMENT WITH MARKS**  
**TO SHOW CHANGES MADE**

**IN THE SPECIFICATION:**

Page 1, substitute the paragraph beginning at line 2 with the following:

[BACKGROUND OF THE INVENTION] **BRIEF DESCRIPTION OF THE RELATED ART**

[0001] The invention relates to heart rate monitors. The invention is applied to a personal non-invasive heart rate monitor. The heart rate monitor equipment may consist e.g. of a conventional two-part device comprising a heart rate transmitter, usually of the transmitter belt type, comprising ECG electrodes, and a wristband receiver unit having a telemetric, inductive or optical connection to the heart rate transmitter and comprising e.g. a microprocessor, display and a user interface. Alternatively, the equipment can be a heart rate measurement apparatus which constitutes one integrated whole, particularly a single wristband, in which case the wristband also comprises a sensor, such as ECG electrodes or a pressure sensor, in addition to the other parts. The sensor may even be an optical heart rate measurement sensor.

Page 2, substitute the paragraph beginning at line 14 with the following:

[BRIEF DESCRIPTION OF THE INVENTION] **SUMMARY OF THE INVENTION**

[0005] An object of the invention is thus to provide a new heart rate monitor, which avoids problems and disadvantages associated with the known solutions.

Page 3, substitute the paragraph beginning at line 1 with the following:

[BRIEF DESCRIPTION OF THE INVENTION] **BRIEF DESCRIPTION OF THE DRAWINGS**

[0009] The invention is now described in connection with the preferred embodiments and with reference to the accompanying drawings, in which

Page 3, substitute the paragraph beginning at line 14 with the following:

[DETAILED DESCRIPTION OF THE INVENTION] DETAILED DESCRIPTION OF THE  
PREFERRED EMBODIMENTS

[0016] The invention thus relates to a carry-on heart rate monitor measuring a person's heart rate non-invasively, i.e. from outside a body, i.e. in practice on the skin of a person.

**IN THE CLAIMS:**

Please amend Claims 3, 8, and 11 by rewriting the same as follows:

3. (Amended) A heart rate monitor as claimed in claim 1 [or 2], wherein the display element for displaying a settable maximum limit for the heart rate level and the second end of the display element unit controlled according to the heart rate level are located on the same side of the display with respect to both [the] a center line of the display parallel to the reading direction of the display and [the] a center line of the display perpendicular to the reading direction of the display.

8. (Amended) A heart rate monitor as claimed in claim 6 [or 7], wherein in a second display mode, the minimum limit and the maximum limit for the heart rate level are shown as a proportion of the maximum heart rate.

11. (Amended) A heart rate monitor as claimed in [any one of claims] claim 6 [to 10], wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.

Please add the following new Claims 14-19:

--14. A heart rate monitor as claimed in claim 2, wherein the display element for displaying a settable maximum limit for the heart rate level and the second end of the display element unit controlled according to the heart rate level are located on the same side of the display with respect to both a center line of the display parallel to the reading direction of the display and a center line of the display perpendicular to the reading direction of the display.

15. A heart rate monitor as claimed in claim 7, wherein in a second display mode, the minimum limit and the maximum limit for the heart rate level are shown as a proportion of the maximum heart rate.

16. A heart rate monitor as claimed in claim 7, wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.

17. A heart rate monitor as claimed in claim 8, wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.

18. A heart rate monitor as claimed in claim 9, wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.

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19. A heart rate monitor as claimed in claim 10, wherein the means for changing the display mode are arranged to change the same display mode for the display element for displaying the minimum limit for the heart rate level, the display element for displaying the maximum limit for the heart rate level, and for the actual main display element for the heart rate level contained in the heart rate monitor.--

**IN THE ABSTRACT:**

Page 13, substitute the paragraph beginning at line 1 with the following:

**[ABSTRACT] ABSTRACT OF THE DISCLOSURE**

The invention relates to a heart rate monitor. The essential point of the invention is that a display element (201) of a display (20) of the heart rate monitor for displaying a settable minimum limit for a heart rate level is located at a first end (211) of a display element unit (210) controlled according to the heart rate level, on the same side of the display as the first end of the display element unit. Similarly, a display element (202) for displaying a settable maximum limit for a heart rate level is located at a second end (220) of the display element unit (210), on the same side of the display as the second end of the display element unit.

[(Figure 6)]